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*The* Brief Description of the Figures

*claim of this patent contains at least one drawing executed in color.*

- [0013] Figure 1 illustrates the clinical features of JEB in Belgian horses;
- [0014] Figure 2 illustrates the altered expression of laminin  $\gamma 2$  in horse JEB using an immunofluorescence analysis of frozen sections of tongue epithelia samples obtained from an affected foal (a, c, e, g) and a healthy unrelated control (b, d, f, h);
- [0015] Figure 3 illustrates the nucleotide (SEQ ID No: 1) and deduced amino acid (SEQ ID No:2) sequence of the horse laminin  $\gamma 2$  chain;
- [0016] Figure 4. Direct comparison of the primary structure of the horse (upper line), human (middle line) and mouse (lower line) laminin  $\gamma 2$  chain;
- [0017] Figure 5 provides a chromatographic comparison of the genomic sequences in which the homozygous insert mutation at position 1368 (1368insC) of the DNA sequence (panel A), the heterozygous situation for the mutation 1368insC in a carrier horse (panel B) and the wild-type DNA sequence (panel C) are shown; and
- [0018] Figure 6 illustrates the inheritance of the laminin  $\gamma 2$  mutant allele in Belgian horses.

Detailed Description of the Invention

- [0019] Junctional epidermolysis bullosa (JEB) in horses has been linked to the  $\gamma 2$  subunit of the laminin-5 gene. A  $\gamma 2$ -encoding polynucleotide has been cloned and sequenced in accordance with an aspect of the present invention. The mutation associated with the clinical signs of JEB in horses results in a homozygous nucleotide insertion in the laminin  $\gamma 2$ -encoding polynucleotide, a frame shift, and a premature termination codon. Specifically, a cytosine insert occurs in the genomic nucleic acid sequence of affected horses at position 1368 of the laminin  $\gamma 2$ -encoding polynucleotide.
- [0020] As used herein, the term "laminin  $\gamma 2$ " is meant to refer to the " $\gamma 2$ " or "LAMC2" subunit of the anchoring filament protein, laminin-5.
- [0021] The isolated laminin  $\gamma 2$  polynucleotide comprises a 3570-bp full-length open reading frame, the sequence of which is set out in SEQ ID NO: 1 (Fig.3). The polynucleotide encodes a polypeptide consisting of 1190 amino acid residues in its mature form, as identified by three-letter code in SEQ ID NO: 2 (Fig. 3).
- [0022] Laminin  $\gamma 2$ -encoding nucleic acid can be prepared by applying selected techniques of gene isolation or gene synthesis as a first step. As described in more detail in the examples herein, laminin  $\gamma 2$  polynucleotides can be obtained by careful application of conventional gene isolation and cloning techniques such as the homologous RT(PCR) amplification technique. Gene cloning